U.S. AIR FORCE

# The Journey to CMMI Level 4

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CMMI is registered in the US Patent & Trademark Office by Carnegie Mellon University.

# Process Improvement Background

## Software Engineering

Individual software organizations assessed at various levels of the Software Capability Maturity Model (CMM®)

- Avionics Management Directorate - Level 3 (March 1995)
- Electronic Warfare Directorate - Level 2 (May 1996)
- F-15 Directorate - Level 2 (December 1996)

Software organizations consolidated into Software Engineering Division in April 1997

Infrastructure established to support process improvement

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Software Engineering Division was assessed at

# WR-ALC CMMI Involvement

Air Force Representative to draft CMMI Reviewer Team

Air Force Member on CMMI Configuration Control Board

Participated in Alpha Testing of CMMI Training at OO-ALC

Participated in OO-ALC pilot appraisal

Participated in two WR-ALC pilots – Phase I and Phase II

Authorized Standard CMMI Appraisal Method for Process Improvement (SCAMPI) Lead Appraiser by SEI

Authorized CMMI Instructor by SEI

Tom

# CMMI Appraisals

Phase I Pilot (Enterprise – Wide)
- Conducted 12-30 June 2000 across 4 Directorates (LF, LN, LU, LY)
- Utilized draft CMMI-SE/SW/IPPD V0.9, Continuous Representation

Phase II Pilot (SOF SPO/LU)
- Conducted 2-13 April 2001
- Utilized CMMI-SE/SW/IPPD/A V1.02d, Continuous Representation

CMMI Quick Look (F-15 SPO/LF)
- Conducted 23-26 October 2001
- Utilized CMMI-SE/SW/IPPD V1.02d, Continuous Representation

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# Pilot Appraisal Objectives

Provide feedback to the CMMI Product Development Team on:

- appropriateness of CMMI model
- appropriateness of SCAMPI method

Provide findings to understand strengths & improvement opportunities relative to CMMI

Provide data to make business decision to support new CMMI model

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# CMMI Implementation at WR

Software providers are transitioning to CMMI

- Apply staged representation
- Obtain maturity level rating
- Several different domains
- Wide spectrum of project types and scopes

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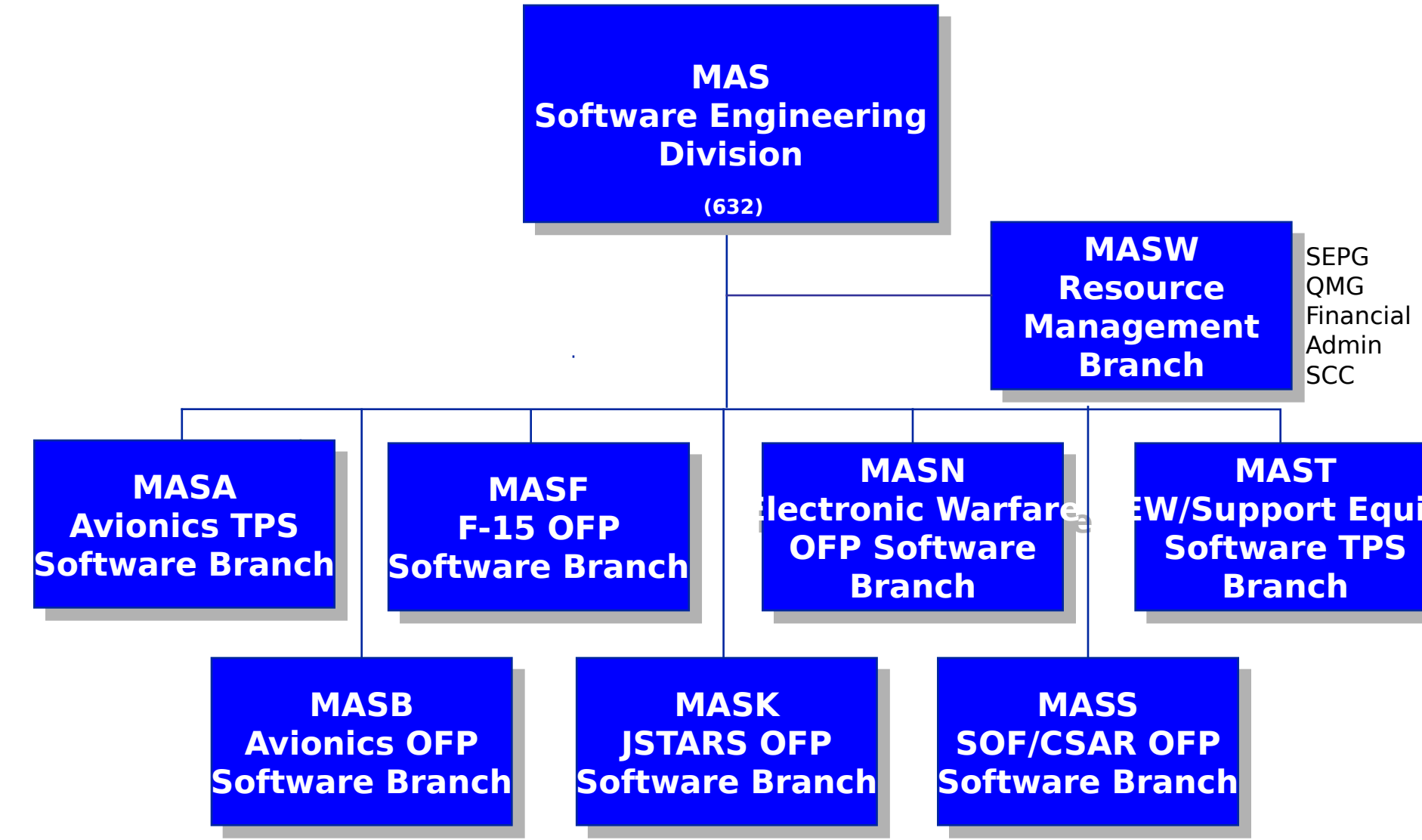
# Software Engineering Division




Tom

# CMMI Transition Approach (1)
## MAS

Revise strategic plan
- Re-evaluate mission, vision, and goals
- Identify quantifiable measures

Focus on lessons learned and recommendations from previous process improvement efforts
- Assessment findings
- Process improvement recommendations

Restructure process improvement teams
- Establish Branch Process POCs
- Spread the wealth – get more people involved

Tom

# CMMI Transition Approach (2)
## MAS

Restructure documentation

- Simplify documentation
- Use more checklists, templates, and examples

Begin with process architecture used for SW-CMM Level 3

- Streamline processes
- Map practices to CMMI
- Identify holes
- Fill gaps
- Determine tailoring requirements

Tom

# CMMI Transition Approach (3)
## MAS

Identify projects to begin transition

Provide CMMI training to projects

Have projects complete the CMMI cross reference matrix

Perform class B/C appraisals and internal audits
- Verify implementation
- Identify areas of improvement

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# CMMI Current Effort

Class B/C appraisals critical to gauge status

Looking at all PAs at Levels 2 – 5 in CMMI SE/SW

4 classes B/C appraisals on 7 projects

As of today: 2 appraisals completed
(18 Nov 03) 1 appraisal ongoing
1 to be done in Dec

Tom

# Summary

Maintenance organizations need to appropriately scale the CMMI

Workforce involvement is critical

Quantifiable business goals are a necessity

Robust measurement program needs to be in place early

- Clearly define measures
- Establish automated methods for collecting data

Practical (not theoretical) approach to Level 4/5 is essential

Process improvement takes time

Tom